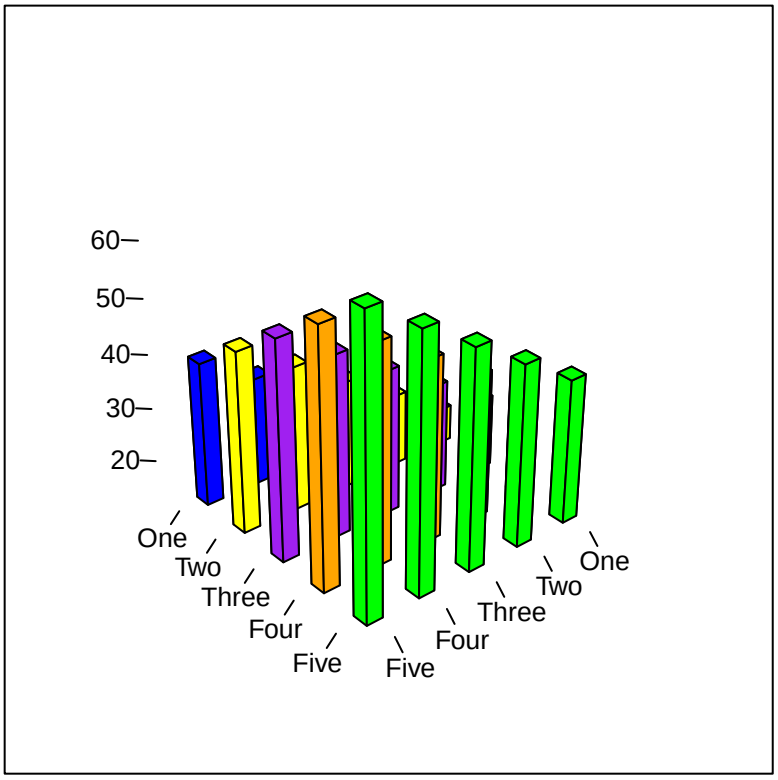
3D Visualisations: What are the alternatives?

We are not going to teach you how to make a 3D visualisation in R because even though at a low density a 3D barchart might work for data with a low density, the alternatives visualisations work in all instances. Another reason, is that there is only one library to make a 3D visualisation and it does not produce a high quality visualisation. If you do want to make a 3D column chart, excel would be a better choice. So lets take a look at that 3D visualisation again and try to come up with alternatives.

```
cloud(as.numeric(as.character(Observation))~as.factor(Type_1)+as.factor(Type_2), Dataset, panel.3d.cloud
          xbase=0.3,
          ybase=0.3,
          zlab = NULL,
          col.facet=c("blue", "yellow", "purple", "orange", "green"),
          group = Type_1,
          scales=list(arrows=FALSE, col=1), xlab = NULL, ylab = NULL, main = NULL,
          par.box = list(col = NA), lcol=NULL
          )
```



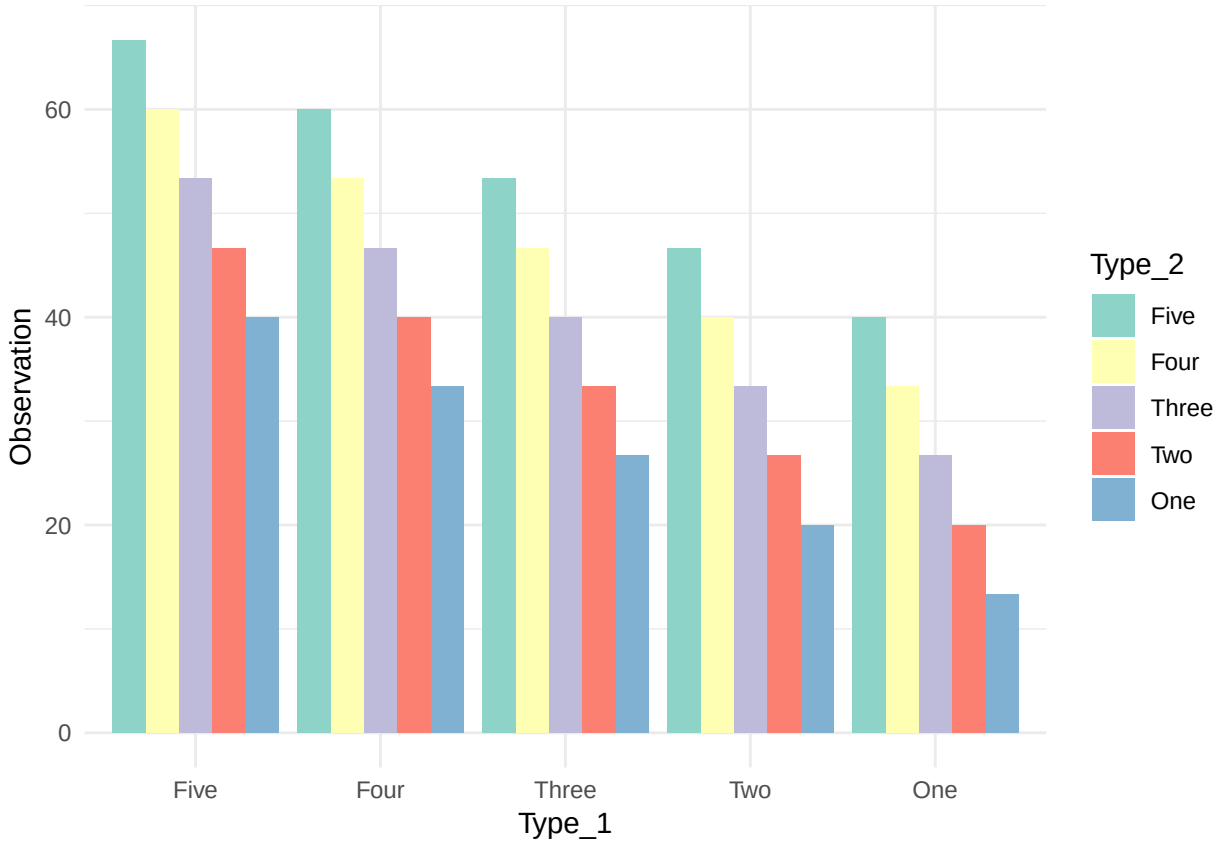
So lets take a quick look at the data. Initially, we will explore fake densely generated data and then we will explore a real dataset. The fake data was generated based on real data exploring number of observations based on **number of genes** and **number of cell types.**

```
##    Type_1 Type_2 Observation
## 1    Five    One    40.00000
## 2    Five    Two    46.66667
## 3    Five  Three    53.33333
## 4    Five   Four    60.00000
## 5    Five   Five    66.66667
## 6    Four    One    33.33333
## 7    Four    Two    40.00000
## 8    Four  Three    46.66667
## 9    Four   Four    53.33333
## 10   Four   Five    60.00000
## 11  Three    One    26.66667
## 12  Three    Two    33.33333
## 13  Three  Three    40.00000
## 14  Three   Four    46.66667
## 15  Three   Five    53.33333
## 16    Two    One    20.00000
## 17    Two    Two    26.66667
## 18    Two  Three    33.33333
## 19    Two   Four    40.00000
## 20    Two   Five    46.66667
## 21    One    One    13.33333
## 22    One    Two    20.00000
## 23    One  Three    26.66667
## 24    One   Four    33.33333
## 25    One   Five    40.00000
```

###So what are the different alternatives to a 3D column chart?

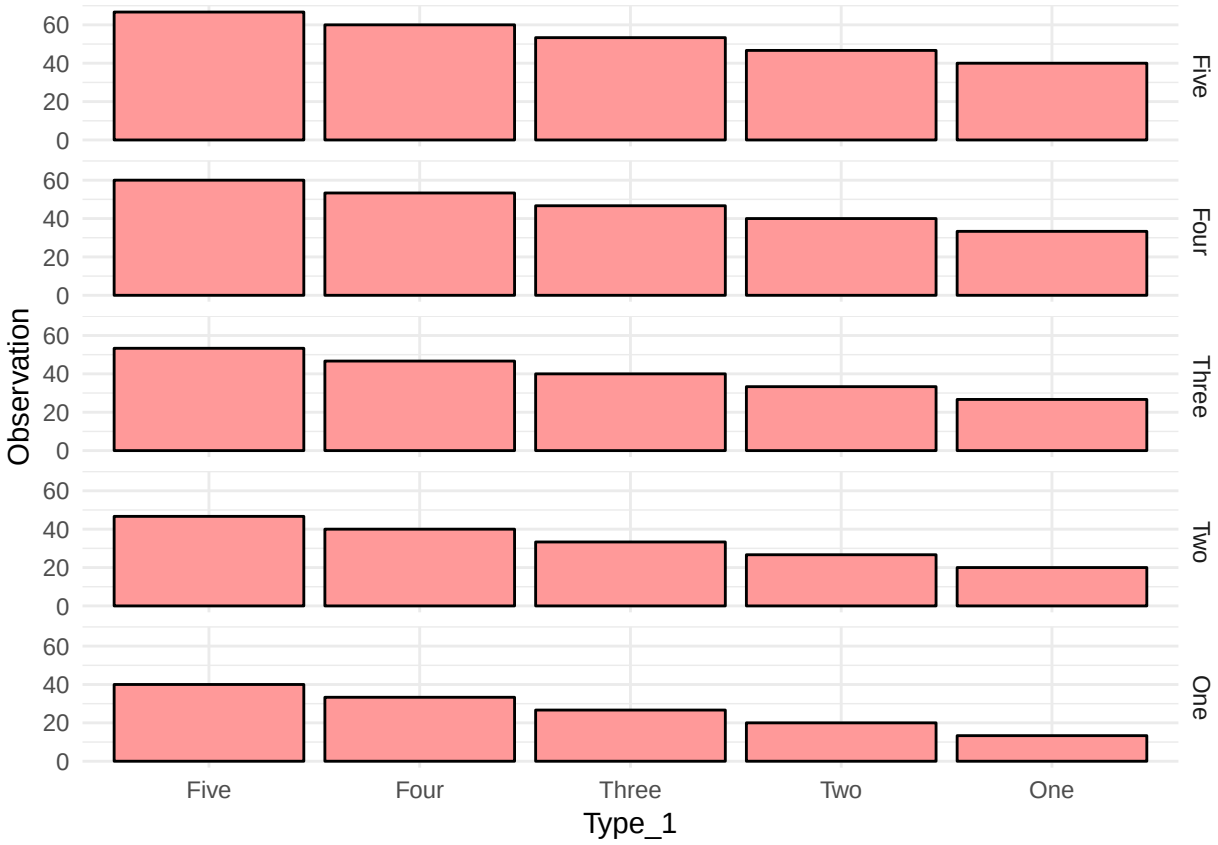
1. Dodge Bar Chart

```
ggplot(Dataset, aes(x = Type_1, y = Observation, fill = Type_2)) + geom_bar(position = "dodge", stat =
```



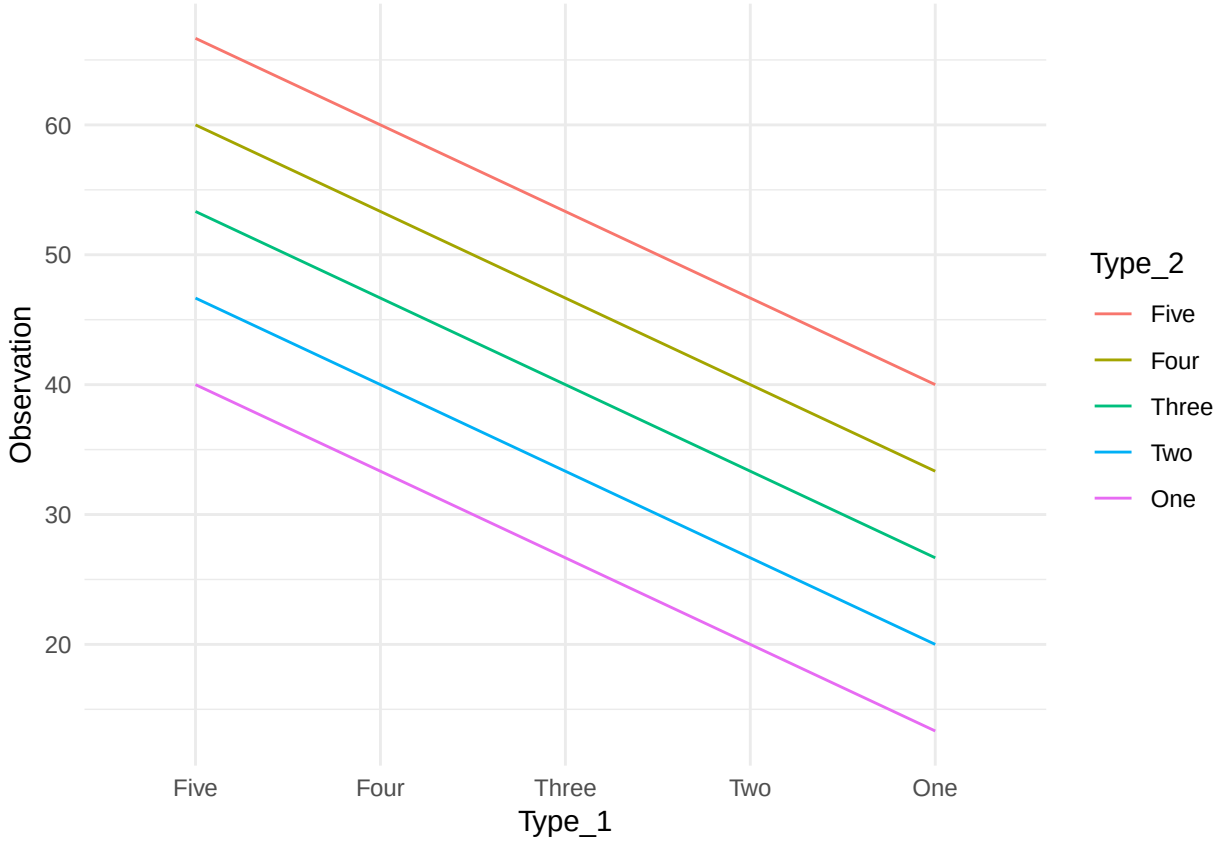
2. Faceted bar charts

```
ggplot(Dataset, aes(x = Type_1, y = Observation)) + geom_bar(position = "dodge", stat = "identity", fil
```



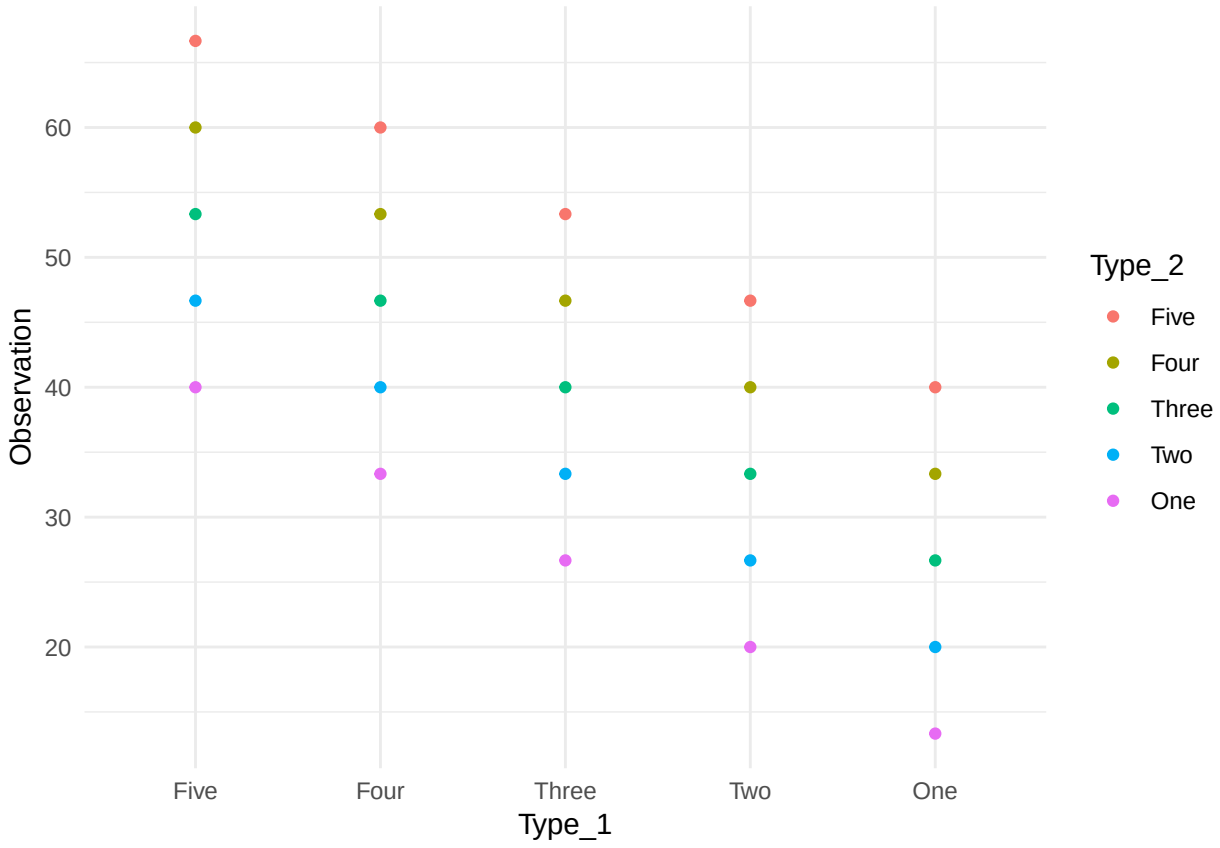
3. Line Chart

```
ggplot(Dataset, aes(x = Type_1, y = Observation, col = Type_2, group= Type_2 )) +  geom_line() + scale_
```



4. Scatterplots

```
ggplot(Dataset, aes(x = Type_1, y =Observation , col = Type_2 )) +  geom_point() + scale_fill_brewer(pal
```


60
50
40
30
20
Observation
Five
Four
Three
Two
One
Type_1
Type_2
Five
Four
Three
Two
One